Memorandum

U.S. Department of Transportation

Federal Aviation Administration

Subject: **ACTION**: Extension of ELOS for Digital N2 & Fuel Flow on Cessna Model 525B, CJ3; ACE- 00-01A

Date: January 27, 2003

From: Associate ACO Manager, Airframe, Propulsion & Services, Wichita Aircraft Certification Office, ACE- 118W

Reply to Attn. of: James P. Ga1stad 316-946-4135

To: Manager, Small Airplane Directorate Project Support Office, ACE-112

Reference: FAA Project AT3268WI-A

Cessna requests extension of an existing ELOS, ACE-00-0l, for digital N2 and engine fuel flow to the Model 5258, CJ3 airplane.

The Model 5258 is a derivative airplane to be on type certificate A1W1 along with the prior certificated Models 525 and 525A. The Model 525 incorporated a Rockwell Collins STC into the type design effective serial number 525-0360 and on. During the approval of the Rockwell Collins STC, ELOS number ACE-00-0l was granted. This ELOS was extended to Cessna for the Model 525 and subsequently to the Model 525A.

Cessna has provided the following information in support of extending ELOS ACE-00-01 to the Mode1525B.

> ELOS NumberACE-00-0l, "FAR §§23.1305(c)(2), (c)(5), and 23.1549(a) through (d), direct reading, digital only displays for the high-pressure turbine speed (N2), and fuel flow indications"
>
> The Model 5258, CJ3, will use electronic displays for those powerplant instruments required by 14 CFR 23.1305(a)(1),(2).(3).(c)(1).(2), and (5). This display will incorporate an all digital numeric presentation for high pressure turbine rotor speed (N2) and fuel flow (Wf). This presentation requires an Equivalent Level of Safety, ELOS, accompanied by appropriate justification to show that the Williams International FJ44-3A engine digital only Wf and N2 display has an equivalent level of safety to the requirements of 14 CFR 23.1549 (a).(b).(c), and (d), meets the intent of 14 CFR 23.1305 (c)(2) and (c)(5) respectively, and addresses the guidance material contained in Paragraph 8.5 of AC 23.1311-1A for electronic digital only engine displays.

The fuel flow digital only numeric indication is displayed on the MFD, which is centrally located on the instrument panel. The display provides a green digital readout against a black background, with a range from 0 to 2000 PPH and a resolution of 10 PPH. The indication is individually displayed for each engine, and is identified by a white "FUEL" or "FF" on the normal display mode and compressed display mode, respectively, above the displays. A white "PPH" is located between the display for each engine. The N2 speed display provides digital readout from 0 to 120% with a resolution of 0.1%. The digital display changes from green to red, flashes red for five seconds, and remains red when N2 exceeds this value plus the display resolution limit.

Since the display of both Wf and N2 are similar to what was previously certified on the Model 525A, CJ2, Cessna respectfully requests that the Model 525A Equivalent Level of Safety for Wf and N2 be extended to the Model 525B, CJ3.

The Wichita ACO concurs with the requested ELOS extension as described above. Concurrence of the Small Airplane Directorate is requested.

s/

Eual M. Conditt, Jr.

The Small Airplane Directorate concurs with the extension of ELOS ACE-00-01 from the Cessna Model 525A, CJ2, to the Model 525B, CJ3.

The Cessna Model 525B, CJ3 is granted ELOS number

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Michael Gallagher
Small Airplane Directorate